



THE INFLUENCE OF EMOTIONAL INTELLIGENCE, GENDER, RESIDENCE, AND ACADEMIC YEAR ON THE ACADEMIC PERFORMANCE OF MEDICAL STUDENTS IN INDONESIA

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ABSTRACT

Emotional intelligence is an important factor influencing academic performance, especially in high-stress fields like medicine. Medical students face rigorous academic demands, making emotional intelligence crucial for coping and achieving optimal performance. Demographic factors, such as gender, residence, and academic year, may also influence learning experiences. Objective: This study examines the influence of emotional intelligence, gender, residence, and academic year on the academic performance of medical students. A cross-sectional study was conducted from October to December 2023 at a university in Indonesia. The sample selection technique used total sampling, resulting in a sample size of 426 medical students. A structured questionnaire collected demographic data and grade point average (GPA), while the Emotional Competence Inventory 2.0 measured emotional intelligence. Data were analyzed using the Kruskal–Wallis and Mann–Whitney tests. The mean emotional intelligence score was 161.2 ± 19.4 , with 8.5% of students in the high category. Age ($p=0.013$) and academic year ($p=0.049$) significantly affected academic performance, while residence and emotional intelligence showed no significant effect ($p>0.05$). Age and academic year had a stronger influence on academic performance than emotional intelligence or residence among medical students.

Keywords: academic performance; emotional intelligence; medical students

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INTRODUCTION

Emotional engagement increases students' cognitive participation, which is reflected in the tendency to analyze the content of tasks in depth and the confidence in completing these tasks effectively (Abbou, 2021). Emotional states have a significant influence on learning performance, where positive emotions can strengthen motivation and concentration, thereby improving achievement, while negative emotions tend to weaken these abilities and reduce learning outcomes (Qi et al., 2025). Emotional intelligence was first described and conceptualized by researchers as an ability-based construct analogous to general intelligence. They argued that individuals with high levels of emotional intelligence possess specific skills related to evaluating and regulating emotions, enabling them to manage emotions in themselves and others to achieve various adaptive outcomes, including achieving good academic performance or a high GPA (Bru-Luna et al., 2021).

Emotional intelligence, the ability to recognize, understand, and manage one's own and others' emotions, has been shown to play a crucial role in academic success, particularly in stressful fields such as medical education (Quílez-Robres et al., 2023; Shengyao et al., 2024). Medical students face a variety of challenges, both from intensive academic demands and stressful clinical experiences, making emotional intelligence a crucial factor in their successful learning and adaptation (Altwijri et al., 2021).

In addition to emotional intelligence, demographic factors such as gender, residence, and academic year also play a role in shaping learning experiences and academic achievement. The academic achievement of female students is generally higher when entering university, which is mainly influenced by internal motivation to seek and master knowledge, while dependence on external motivation, such as external awards or assessments, is relatively lower (Vlachopanou et al., 2025). Previous research has shown that students living away from home often face financial stress and social isolation, which can affect their academic performance (Medani et al., 2024). Similarly, differences in academic year may indicate variations in adjustment to the learning environment, with first-year students likely facing more adaptation challenges than those in their final year (Anbesaw et al., 2022).

This study aims to analyze the influence of emotional intelligence, gender, residence, and academic year on the academic performance of medical students in Indonesia. By understanding the relationship between these variables, it is hoped that the results will provide deeper insight into the factors supporting academic success and provide recommendations for the development of emotional intelligence training programs in medical education settings.

METHOD

A cross-sectional study was conducted from October to December 2023 at an Indonesian university specializing in the medical study program. The population was active medical students enrolled in the 2020-2022 academic year. A total sampling technique was used to obtain a sample size of 426 students. The sample met the inclusion criteria (willingness to participate as respondents with informed consent for the questionnaire and interviews) and exclusion criteria (students who incompletely completed the questionnaire and provided uninformative answers during the interview, thus being ineligible).

The research instrument used in this study was the Emotional Competence Inventory 2.0 (ECI), which serves to assess the level of emotional intelligence in students (Goleman, 2021). There were 60 questions with answer choices of strongly agree = 4, agree = 3, disagree = 2, and strongly disagree = 1. If the emotional intelligence score reaches above 181, it is categorized as high, if 142-181 is categorized as medium, and if the score is below 142, it is categorized as low. Gender is categorized as 1 = female and 2 = male; student residence categories are 1 if living in a campus dormitory, 2 if living in a boarding house or off-campus environment, and 3 if living at home with parents. The academic year is divided into three categories: 2020, 2021, and 2022. The indicator of student academic performance during the lecture uses the GPA value obtained, with categories divided into two: high if the value is 3.00 and above, and low if the value is below 3.00. Questions regarding emotional intelligence have been tested for validity and reliability with a Cronbach's Alpha value of 0.965.

Data collection on emotional intelligence, gender, residence, academic year, and academic performance of students was obtained from a structured questionnaire, which is primary data obtained directly online from medical student respondents in the academic years of 2020, 2021, and 2022. Data processing used SPSS statistical software 22.0. Data analysis used non-parametric methods because emotional intelligence and GPA values were not normally distributed, to determine the effect of emotional intelligence, gender, and residence on academic performance using the Mann-Whitney test and the Kruskal-Wallis test. This study has received ethical approval from the Health Research Ethics Commission of the Faculty of Medicine and Health, Universitas Muhammadiyah Jakarta, with ethical number 201/PE/KE/FAK-UMJ/XI/2023.

RESULT

Data analysis from 426 medical students at an Indonesian university showed that the majority of respondents were female (65.3%) and resided in boarding houses (48.8%). Respondents in the 2022 academic year were slightly more numerous than those in the 2020 and 2021 academic years, at

36.4%. The average emotional intelligence score of students was 161.2 ± 19.4 , with the lowest score being 60 and the highest being 240; the majority of students' emotional intelligence was in the moderate category, at 85.2%. The average GPA was 3.01 ± 0.40 , with the lowest score being 1.08 and the highest being 3.94; the majority of students' GPAs were in the high category (60.8%)

Table 1.

Respondent characteristics (n=426)

Characteristics	f	%
Gender		
Female	278	65.3
Male	148	34.7
Residence		
Boarding	114	26.8
Rent	208	48.8
House	104	24.4
Academic years		
2020	128	30.0
2021	143	33.6
2022	155	36.4
Emotional intelligence	Mean±SD: 161.2 ± 19.4 Median: 162.0 Man-Max: 60-240	
Low	27	6.3
Moderate	363	85.2
High	36	8.5
Academic performance	Mean±SD: 3.01 ± 0.40 Median: 3.06 Man-Max: 1.08-3.94	
Low	167	39.2
High	259	60.8

The analysis results in Table 2 show that female students have higher academic performance than male students, thus gender has a significant effect on the academic performance of medical students ($p=0.013$). Student residence (dormitory, boarding house, or home) did not show a significant difference in academic performance ($p=0.432$), indicating that residence does not affect academic performance. Students from the 2021 academic year had slightly higher academic performance compared to the 2020 and 2022 academic years, indicating that the academic year significantly influences student academic performance ($p=0.049$). Although students with moderate emotional intelligence showed higher academic performance compared to those with low or high emotional intelligence, these results indicate that emotional intelligence does not significantly influence the academic performance of medical students ($p=0.168$).

Table 2.

The influence of emotional intelligence, gender, and residence on academic performance

Characteristics	Academic performance (Mean±SD)	p-value
Gender*		0.013
Female	3.05 ± 0.35	
Male	2.93 ± 0.47	
Residence**		0.432
Boarding	3.03 ± 0.41	
Rent	2.98 ± 0.40	
House	3.03 ± 0.39	
Academic years**		0.049
2020	3.03 ± 0.37	
2021	3.05 ± 0.40	
2022	2.96 ± 0.42	
Emotional intelligence**		0.168
Low	2.97 ± 0.43	
Moderate	3.02 ± 0.39	
High	2.89 ± 0.45	

*Mann-Whitney test

**Kruskal-Wallis test

DISCUSSION

The findings of this study provide valuable insights into the various factors influencing the academic performance of medical students in Indonesia. Demographic factors such as gender and academic year appear to play a larger role, with both gender and academic year significantly influencing student academic performance. Systematic review research shows that female students have academic excellence in various disciplines (Jayathilake et al., 2023). Previous research has shown that age influences students' academic achievement in college. This study revealed that the younger the student, the better their academic performance (Yusuf et al., 2020).

Emotional intelligence (EI), often considered a determinant of educational success, surprisingly did not show a significant relationship with academic performance in this study. This is in line with previous research conducted on medical students, where no significant relationship was observed between emotional intelligence and academic success (Altwijri et al., 2021). However, other studies have shown different results, where emotional intelligence has a positive and significant effect on student achievement (Bimayu et al., 2020). Shengyao et al. (2024) found that emotional intelligence is positively related to positive psychological characteristics, psychological well-being, and academic achievement, with a stronger impact in postgraduate students. These results suggest that while EI can contribute to personal and interpersonal growth, its direct impact on academic outcomes in the context of medical education in Indonesia may be limited.

This study also demonstrated that student residence does not impact academic performance. A cross-sectional study conducted by the community medicine department of a leading medical institute in Delhi found no association between residence and academic performance of medical students (Priyanka et al., 2020). Students' residential status at the Rehman Medical campus did not impact their academic performance in Forensic Medicine (Rehman et al., 2020). Previous research also found that hostel overcrowding is an independent risk factor for low academic performance in medical students (Tiruneh et al., 2020). Previous research has shown that the distance of residence from home can cause students to face challenges in the form of financial burdens and social isolation, which can potentially affect their academic performance (Medani et al., 2024).

These discrepancies in results may be due to differences in research contexts, such as educational level, field of study, or sample characteristics, which influence how emotional intelligence plays a role in academic success. Furthermore, cultural influences and educational systems can also modulate the role of emotional intelligence. Variations in measurement tools and conceptual approaches to emotional intelligence also potentially influence the consistency of the results. These findings emphasize that academic performance is the result of a complex interaction between cognitive, emotional, and environmental factors, and further research is needed to fully understand these dynamics, particularly through a longitudinal approach.

CONCLUSION

Overall, the results of this study indicate that gender and academic year are more strongly associated with academic performance, while residence and emotional intelligence do not significantly influence the academic performance of medical students. This suggests that certain demographic factors, such as differences in experience based on academic year and gender characteristics, may be more influential in determining academic success than psychological factors and the residential environment. Educational institutions can develop appropriate mentoring and academic support programs for each academic year. Future researchers are encouraged to explore other factors, such as learning methods and social support that may influence academic performance.

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